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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/644,532 | 08/24/2000 | Runsheng He | MP0027 | 2745 |

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MARVELL SEMICONDUCTOR, INC.
INTELLECTUAL PROPERTY DEPARTMENT
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EXAMINER

TSE, YOUNG TOI

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2634

9

DATE MAILED: 09/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/644,532

Applicant(s)

HE, RUNSHENG

Examiner

Young T. Tse

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-28, 30-45, 47-65 and 67-74 is/are rejected.
- 7) ☒ Claim(s) 9, 29, 46 and 66 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 August 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to because the numerals labeled for the block elements of figures 1, 3, and 6-8 are too far away from the block elements. See the correct way of labeling in figure 9. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: on page 2, line 5, "106" (both occurrences) should be -- 105 -- and on page 7, line 30, "312" should be -- 302 --. Appropriate correction is required.

Claim Objections

4. Claims 1-17 and 19-74 are objected to because of the following informalities: in claim 1, line 6, "feed forward" should be -- feedforward --; in line 1 of claims 2-17 and

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19-37, "circuit" should be – apparatus --; in claim 13, line 3, "filtering" should be – filtering postcursor ISI --. Also see claims 33, 50, and 69; in claim 17, line 1, "15" should be – 16 --; in claim 38, line 4, "signal" should be – signal; -- and line 8, "feed forward" should be – feedforward --; in claim 46, line 4, ", and" should be in the same line with the equation; and in claim 55, line 1, "A signal processing apparatus" should be – An Ethernet transceiver --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 38-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 38, lines 5-6, "said input circuit" lacks clear antecedent basis.

Wherein the dependent claims 39-54 are directly or indirectly depended upon claim 38.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-8, 10-28, 30-45, 47-65, and 67-74 are rejected under 35 U.S.C. 102(e) as being anticipated by Samuelli et al. (U.S. Patent No. 6,178,198).

Samuelli discloses a decision feed back equalizer in Fig. 5. which comprises a feed forward path having an A/D converter 48, a highpass filter 100, a feed forward equalizer 102; a soft decision circuit 104; a quantizer circuit 112; a decision feed back equalizer 108; a summation circuit 106; and a tail canceller 110.

With respect to claims 1, 18, 38, and 55, the decision feed back equalizer clearly comprises a feedforward equalizer including the highpass filter 100 and the feed forward equalizer 102; a decision circuit including the soft decision circuit 104 and the quantizer 112; and a feedback filter including the decision feed back equalizer 108, the summation circuit 106, and a tail canceller 110.

With respect to the dependent claims 2-8, 11-17, 19-28, 30-37, 39-45, 47-54, 56-65, and 67-74, the claimed subject matter are all well known elements provided in a decision feedback equalizer.

Allowable Subject Matter

9. Claims 9, 29, 46, and 66 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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10. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to show or suggest that the coefficient of an FIR filter W is equal to a unit by the equation recited in claims 9, 29, 46, and 66.

Conclusion

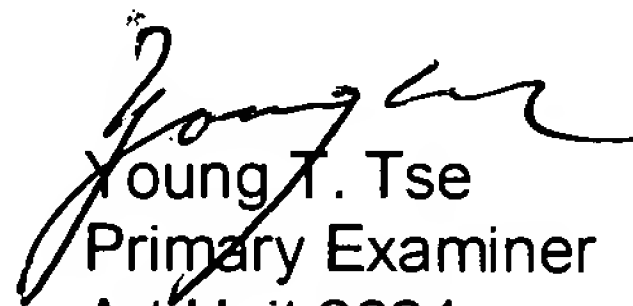
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

References Batruni, Turner, Raghavan, and Agazzi et al. are all related to a decision feed back equalizer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Young T. Tse whose telephone number is 703 305-4736. The examiner can normally be reached on M-F, 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703 305-4714. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.


Young T. Tse
Primary Examiner
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